English

Introduction to the NEC MultiSync LCD2110

Congratulations on your purchase of the NEC MultiSync LCD2110 true colour monitor!

NuCycle Plastic

A special silicone compound for PC resin, being extremely flame-retardant, safe and environmentally friendly.

Wide Viewing Angle Technology

Allows the user to be able to see the monitor from any angle(170 degrees) from any orientation – Portrait or Landscape. Provides full 170˚ viewing angles either up, down, left or right.

Analog Advantage

Capable of displaying unlimited colours in a continuous spectrum, providing a truer representation of colour. The monitor's high contrast LCD enhances colour vibrancy and improves focus with no geometric distortion.

Wider Compatibility

Because the MultiSync LCD monitor is analog through and through, it does not require special analog to digital display or interface cards but can accept RGB input directly.

Reduced Footprint

Provides the ideal solution for environments requiring superior image quality but with size and weight limitations. The monitor's small footprint and low weight allow it to be moved or transported easily from one location to another.

Colour Control system

Allows you to adjust the colours on your screen and customize the colour accuracy of your monitor to a variety of standards.

English

OSM (On-Screen Manager) Controls

Allow you to quickly and easily adjust all elements of your screen image via simple to use on-sreen menus.

ErgoDesign Features

Enhance human ergonomics to improve the working environment, protect the health of the user and save money. Examples include OSM controls for quick and easy image adjustments, tilt/swivel pivot stand for preferred angle of viewing, small footprint and compliance with MPRII and TCO guidelines for lower emissions.

Pivoting Stand

Allows users to adjust the monitor to the orientation that best fits their application, either Landscape orientation for wide documents, or portrait orientation for the ability to preview a full page on one screen at one time. The Portrait orientation is also perfect for full screen video conferencing.

Plug and Play

The Microsoft solution with the Windows operating system facilitates setup and installation by allowing the monitor to send its capabilities (such as screen size and resolutions supported) directly to your computer, automatically optimizing display performance.

IPM (Intelligent PowerManager) System

Provides innovative power-saving methodes that allow the monitor to shift to a lower power consumption level when on but not in use, saving two-thirds of your monitor energy cost, reducing emissions and lowering the air conditioning cost of the workplace.

Multiple frequency Technology

Automatically adjusts monitor to the display card's scanning frequency, thus displaying the resolution required up to 1600 x 1200.

FullScan Capability

Allows you to use the entire screen area in most resolutions, significantly expanding image size.

VESA Standard Mounting Interface

Allows users to connect their MultiSync monitor to any VESA standard third party mounting arm or bracket. Allows for the monitor to be mounted on a wall or an arm using any third party compliant device.
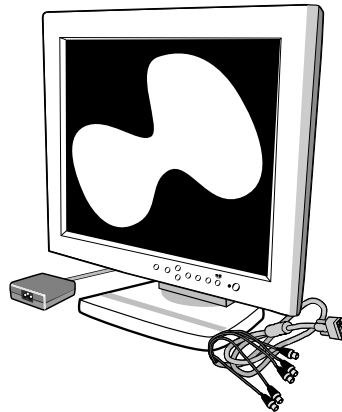
BNC/D-SUB

Offers dual inputs, allowing you to connect the monitor to one system via a BNC cable and a another system via a standard D-Sub cable. You can easily switch between computers with a touch of a button on the up-front control panel.

English

Contents of Package

Your new MultiSync LCD monitor box should contain the following:

MultiSync LCD2110 monitor
with 15-pin VGA to BNC Cable
and AC Adapter

– NEC MultiSync LCD2110 (Model LA-2141JMW-P)

– AC power cable.

– AC Adapter. (Type A2440S01)

– Video Signal Cable – 15 pin VGA to BNC.

– User's manual.

– NEC LCD Setup Software, Pivot Software and other helpful files.

Remember to save the original box and packing materials to transport or ship the monitor.

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Recommended Use

For optimum performance, please note the following when setting up and using the MultiSync LCD2110 colour monitor:

- DO NOT OPEN THE MONITOR. There are no user serviceable parts inside and opening or removing covers may expose you to dangerous shock hazards or other risks. Refer all servicing to qualified service personnel.

- The optimum monitor position is facing away from direct sunlight.

- Allow adequate ventilation around the monitor so that heat can properly dissipate. Do not block ventilated openings or place the monitor near a radiator or other heat sources. Do not put anything on top of monitor.

- Do not spill any liquids into the cabinet or use your monitor near water.

- Do not insert objects of any kind into the cabinet slots, as they may touch dangerous voltage points, which can be harmful or fatal or may cause electric shock, fire or equipment failure.

- Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.

- Do not place this product on a sloping or unstable cart, stand or table, as the monitor may fall, causing serious damage to the monitor.

- Use the monitor in a clean and dry area.

- Handle with care when transporting. Save packaging for transporting.

- The power cable connector is the primary means of detaching the system from the power supply. The monitor should be installed close to a power outlet which is easily accessible.

- Use supplied AC Adapter.

- The inside of the fluorescent tube located within the LCD monitor contains mercury. Please follow the bylaws or rules of your local municipality to dispose of this tube property.

- Clean the LCD monitor surface with a lint-free, non-abrasive cloth. Avoid using any cleaning solution, glass cleaner or tissue paper.

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- For optimum performance, allow 20 minutes for warm-up.
- Avoid displaying fixed patterns on the monitor for long periods of the time to avoid image persistence (after-image effects.)
- Avoid applying pressure to the LCD monitor surface.
- This MultiSync LCD monitor is integrated with OptiShield protective glass that helps protect your valuable and potentially fragile LCD panel.
  Please note that OptiShield glass is not safety glass and is not laminated. As with other glass, OptiShield glass may break into sharp pieces if abused, dropped, or otherwise subjected to a substantial shock. If OptiShield does break, please use care to avoid injury.
  MultiSync brand monitors equipped with OptiShield glass will have a reflective surface which, under normal lighting conditions, can cause eyestrain if viewed for long periods of time. To avoid eyestrain, we recommend these monitors be used in applications — such as information kiosks, industrial plants, machinery control systems, and trading floors — where the screens will be viewed only intermittently.

Immediately unplug your monitor from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power supply cord or plug is damaged.
- If liquid has been spilled or objects have fallen into the monitor.
- If the monitor has been exposed to rain or water.
- If the monitor has been dropped or the cabinet is damaged.
- If the monitor does not operate normally by following operating instructions.

CAUTION:

- Allow adequate ventilation around the monitor so that heat can properly dissipate. Do not block ventilated openings or place the monitor near a radiator or other heat sources. Do not put anything on top of monitor.
- The power cable connector is the primary means of detaching the system from the power supply. The monitor should be installed close to a power outlet which is easily accessible.
- Use caution when carrying the monitor, as the compact stand may extend automatically.

- Handle with care when transporting. Save packaging for transporting.

- This LCD monitor is designed for use with a flexible arm, therefore it is delivered without stand. Please use the attached screws (4pcs) when installing. To fulfil the safety requirements the monitor must be mounted to an arm which guaranties the necessary stability under consideration of the weight of the monitor. The LCD monitor shall only be used with an approved arm (e.g. GS mark).

CORRECT PLACMENT AND ADJUSTMENT OF THE MONITOR CAN REDUCE EYE, SHOULDER AND NECK FATIGUE. CHECK THE FOLLOWING WHEN YOU POSITION THE MONITOR:

- Adjust the monitor height so that the top of the screen is at or slightly below eye level. Your eyes should look slightly downward when viewing the middle of the screen.

- Position your monitor no closer than 40 cm and no further away than 70 cm from your eyes. The optimal distance of MultiSync LCD2110 is 61 cm.

- Rest your eyes periodically by focusing on an object at least 6 m away.

- Position the monitor at a 90° angle to windows and other light sources to minimize glare and reflections. Adjust the monitor tilt so that ceiling lights do not reflect on your screen.

- If reflected light makes it hard for you to see your screen, use an anti-glare filter.

- Adjust the monitor's brightness and contrast control to enhance readability.

- Use a document holder placed close to the screen.

- Position whatever you are looking at most of the time (the screen or reference material) directly in front of you to minimize turning your head while you are typing.

- Get regular eye checkups.

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Installation

Connection to your Personal Computer

The MultiSync LCD2110 true colour monitor complements PC compatible computers. Your system has one of two configurations:

–   the video controller is built into the computer.

–   the video controller is in the form of a display card (sometimes referred to as graphics card, video adapter or graphics board).

Both configurations have a video connector (or a CRT PORT on laptop computers). If you are not sure which connector is the video connector, refer to your computer or display card manual.

To attach the MultiSync LCD2110 monitor to your system, follow these instructions:

1.   Turn off the power to your computer.

2.   Connect the 15-pin mini D-SUB of the appropriate signal cable to the connector of the display card in your computer (Figure A.1) (Figure B.1). Tighten all screws.

NOTE: Some Macintosh systems require a Macintosh cable adapter.

3.   Remove connector cover on back of monitor. Connect the BNC cables and AC adapter cable to the appropriate connectors on the back of the monitor.
If you are using the supplied video signal cable, continue to step 4. If you are using a 15-pin mini D-SUB cable (not included), please skip to Step 5.

4.   Connect the red BNC cable to the BNC connector on the monitor labeled R, the green BNC cable to the BNC connector labeled G/Sync, the blue BNC cable to the BNC connector labeled B. If you have a fourth BNC connector (Composite Sync), connect it to the BNC connector on the monitor labeled HS/CS. If you have a fifth BNC connector (Vertical Sync), connect it to the BNC connector on the monitor labeled VS

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(Figure C.1). Place the 15-pin VGA to BNC Cable under clip A (Figure D.1A). Then place the 15-pin VGA to BNC cable under Clip B (FigureD.1B).

5. Connect the D-SUB cable to D-SUB connector on the back of the monitor (Figure C.2).

6. Replace connector cover.

NOTE: Incorrect cable connections may result in irregular operation, damage display quality/components of LCD module and/or shorten the module's life.

7. Connect one end of the power cord to the AC Adapter and the other end to the power outlet (Figure E.1).

8. Turn on the monitor (Figure F.1) and the computer.

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9. To complete the setup of your MultiSync LCD monitor:

   A. Set the resolution to 1600 x1200 @60 Hz.

   B. Use the following OSM controls:

   • Auto Adjust Contrast

   • Auto Adjust

   • Image Adjust – Fine

NOTE: Manual adjustment of the H/V Position and Image Adjust H. Size / Fine controls may be required to complete setup of your MultiSync monitor. For a full description of these OSM controls, refer to the Controls section of this User's Manual.

10. Refer to User's Manual in the NEC LCD Setup Software CD case for installation and operation of this software.

NOTE: If you have any problems, please refer to the Troubleshooting section of this User's Manual.
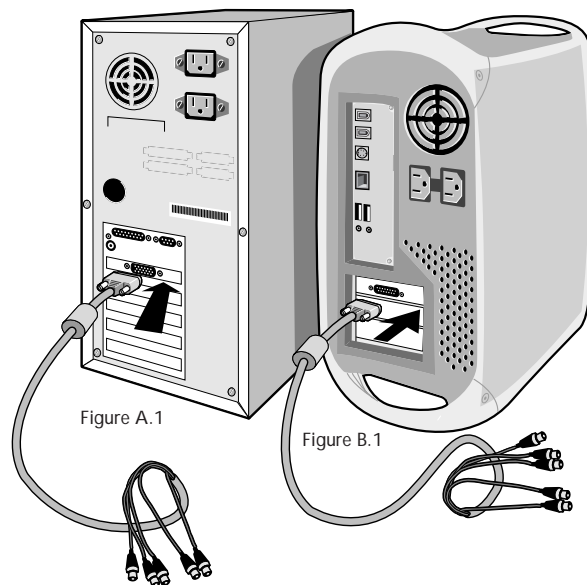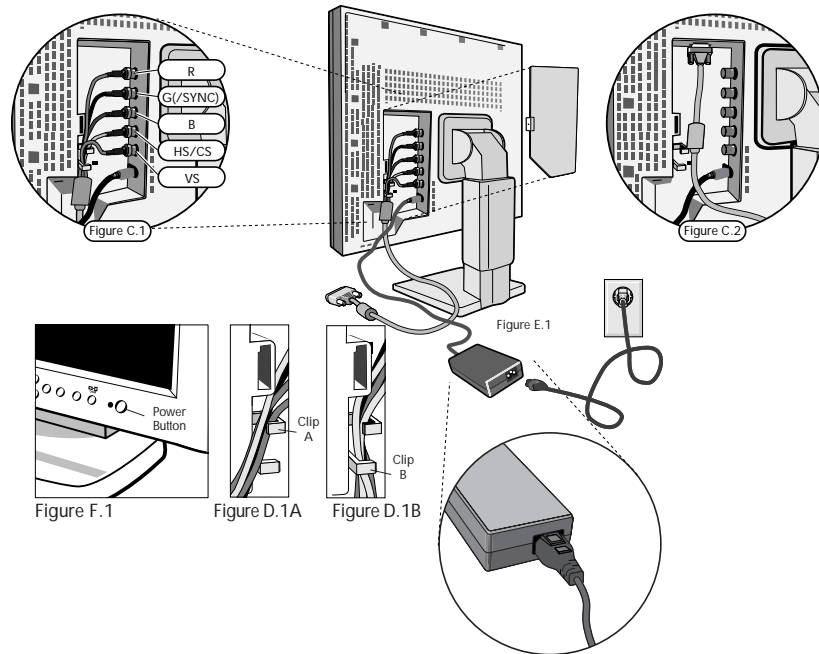
Figure A.1

Figure B.1

Raise and Lower Monitor Screen

The monitor may be raised or lowered in either Portrait or Landscape mode.

To raise or lower screen, place hands on each side of the monitor and lift or lower to the desired height (Figure RL.1).

Screen Rotation

Before rotating, the screen must be raised to the highest level to avoid knocking the screen on the desk or pinching your fingers.

To raise the screen, place hands on each side of the monitor and lift up to the highest position (Figure RL.1).

To rotate screen, place hands on each side of the monitor screen and turn clockwise from Landscape to Portrait or counter-clockwise from Portrait to Landscape (Figure R.1).

To toggle the orientation of the OSM menu between Landscape and Portrait modes, press the RESET button while OSM menu is off.

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Tilt and Swivel

Grasp both sides of the monitor screen with your hands and adjust the tilt and swivel as desired (Figure TS.1).

Figure RL.1
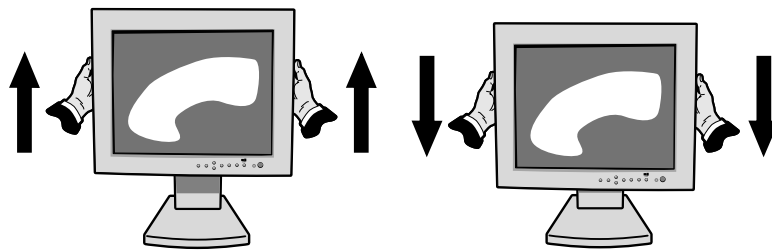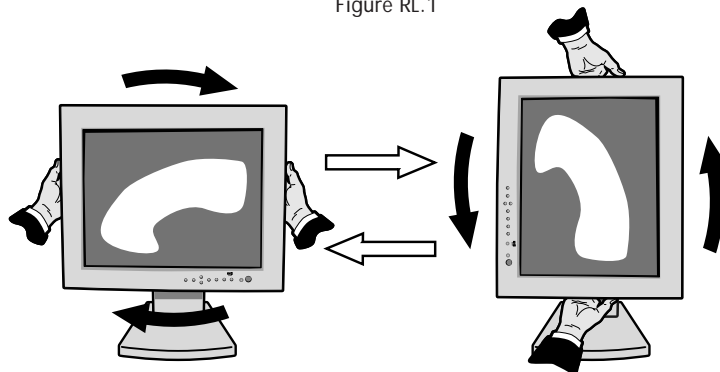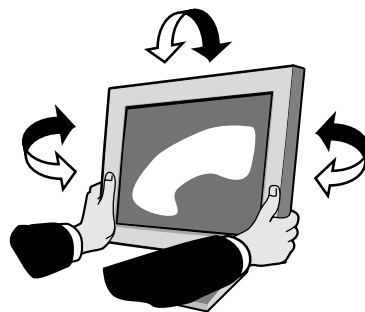
Figure R.1

Figure TS.1

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Remove Monitor Stand for Mounting

To prepare the monitor for alternate mounting purposes:

1. Disconnect all cables.

2. Place hands on each side of the monitor and lift up to the highest position (Figure RL.1).

3. Place monitor face down on a non-abrasive surface (Place the screen on a 55mm platform so that the stand is parallel with the surface.) (Figure S.1).
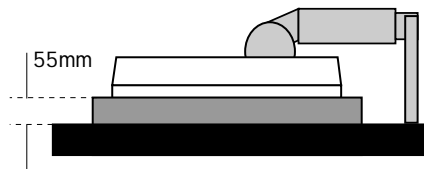
Figure S.1

4. Press the " ▼" portion with your index finger and at the same time slide the lower stand cover (Figure S.2).
   Next, lift up the stand, remove the lower stand cover, then go on to remove the upper stand cover (Figure S.3).
   Return the stand to its original position, remove the 4 screws that connect the monitor to the stand, and lift off the stand assembly (Figure S.4).

5. Reverse this process to reattach stand.

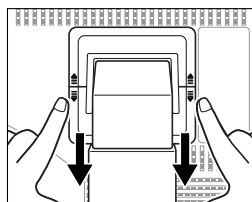**NOTE:** Use only VESA-compatible alternative mounting method.
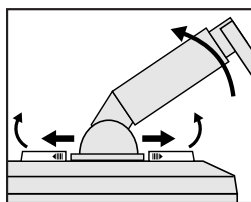
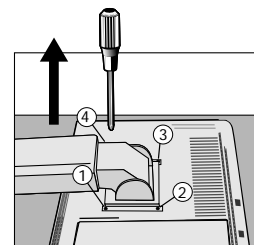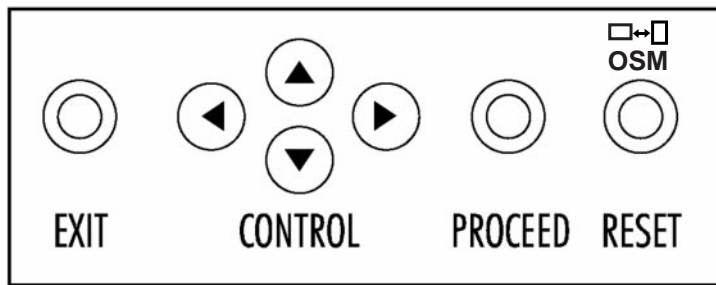Figure S.2   Figure S.3   Figure S.4

English

Controls

BNC/D-SUB: Allows you to change between the BNC and D-SUB signal inputs.

OSM Controls

The OSM controls on the front of the monitor provide the following functions:

To access OSM press any of the control buttons (◄,►, ▲,▼) or the PROCEED or EXIT button.
To rotate OSM between Landscape and Portrait modes, press the RESET button.
NOTE: OSM menu must be closed in order to rotate.

	Main Menu	Sub-Menu
EXIT	Exits the OSM controls.	Exits to the OSM main menu.
CONTROL ▲/▼	Moves the highlighted area up/down to select one of the controls	Moves the highlighted area up/down to select one of the controls
CONTROL ◄/►	Moves the highlighted area left / rights to select control menus.	Moves the bar left / right to increase or decrease the adjustment.
PROCEED	Has no function.	Activates Auto Adjust and ALL RESET functions.
RESET	Resets the highlighted contol menu to the factory setting.	Resets the highlighted contol to the factory setting.

NOTE: When **RESET** is pressed in the main and sub-menu, a warning window will appear allowing you to cancel the **RESET** function by pressing the EXIT button.

☼ ◑ Brightness/Contrast Controls

☼ BRIGHTNESS
Adjusts the overall image and background screen brightness.

◑ CONTRAST
Adjusts the image brightness in relation to the background.

AUTO AUTO ADJUST CONTRAST
Adjusts the image displayed for non-standard video inputs.

AUTO Auto Adjust

Automatically adjusts the Image Position, H. Size and Fine settings.

NOTE: Manual adjustment of the H/V Position and Image Adjust H. Size / Fine controls may be required to complete setup of your MultiSync monitor.

⊹ Position Controls

◁□▷ H. POSITION
Controls Horizontal Image Position within the display area of the LCD.

V. POSITION
Controls Vertical Image Position within the display area of the LCD.

AUTO AUTO
Automatically sets the Horizontal and Vertical Image Position within the display area of the LCD.

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↔ Image Adjust Controls

↔ H. SIZE

Adjusts the horizontal size by increasing or decreasing this setting.

FINE

Improves focus, clarity and image stability by increasing or decreasing this setting.

AUTO Automatically adjusts the H. Size and Fine settings.

ⓇⒼⒷ Colour Control System

Five colour presets select the desired colour setting. Each colour setting is adjusted at the factory.

R,G,B: Increases or decreases Red, Green or Blue colour depending upon which is selected. The change in colour will appear on screen and the direction (increase or decrease) will be shown by the bars.

Tools

OSM H. POS.
OSM V. POS.

You can choose where you would like the OSM control window to appear on your screen. Selecting OSM Location allows you to manually adjust the position of the OSM control menu left, right, up or down.

ALL RESET

Selecting ALL RESET when BNC input is selected allows you to reset all OSM control settings for the BNC input back to the factory settings.

Selecting ALL RESET when D-SUB input is selected allows you to reset all OSM control settings for the D-SUB input back to the factory settings.

Individual settings can be reset by highlighting the control to be used and pressing the RESET button.

ℹ **Information**

Indicates the current display resolution, frequency setting and type of Sync signal of the monitor.

NOTE: If the ◄ or ► button is pressed while TYPE is highlighted, then Sync Type is switched between Separate Sync and Sync On Green.

OSM LOCK OUT

The OSM LOCK OUT control completely locks out access to all OSM control functions. When attempting to activate OSM controls while in the LOCK OUT mode, a screen will appear indicating that OSM controls are locked out.

- To enter the LOCK OUT mode, simultaneously press the PROCEED and ▼ button. The LOCK OUT window will appear.

- To activate the LOCK OUT function, simultaneously press and hold down the PROCEED and ▲ button. The OSM window will disappear within seconds and the LOCK OUT function will be activated.

- To deactivate the LOCK OUT mode, simultaneously press the PROCEED and ▲ button.

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Multisync LCD2110

Display	54.1 cm (21.3 inch) viewable image size; 1600 x 1200 native resolution (Pixel Count); active matrix; thin film transistor (TFT); liquid crystal display (LCD); 0.27 mm dot pitch; 180 cd/m^2 white luminance, typical; 250:1 contrast ratio, typical	
Input Signal	Video	Analog 0.7 Vp-p 75 Ω
	Sync	Separate sync. TTL Level Horizontal sync. Positive/Negative Vertical sync. Positive/Negative Composite sync. (Positive/Negative) (TTL Level) Sync on Green video (Positive) 0.7 Vp-p and sync. Negative 0.3 Vp-p
Display Colours	Analog Input:	Unlimited number of colours (Depends on the graphics board)
Synchronisation Range	Horizontal Vertical	24.0 kHz to 82.0 kHz (Automatically) 56.0 Hz to 76.0 Hz (Automatically)
Resolutions Supported	Landscape	720 x 400*: VGA text 640 x 480* at 60 Hz to 76 Hz 800 x 600 at 56 Hz to 76 Hz 832 x 624* at 75 Hz 1024 x 768* at 60 Hz to 76 Hz 1280 x 960* at 60 Hz to 76 Hz 1280 x 1024* at 60 Hz to 76 Hz 1600 x 1200** at 60 Hz
	Portrait	480 x 640* at 60Hz to 76Hz 600x 800 at 56 Hz to 76 Hz 624 x 832* at 75 Hz 768 x 1024* at 60 Hz to 76 Hz 960 x 1280* at 60 Hz to 76 Hz 1024 x 1280* at 60 Hz to 76 Hz 1200 x 1600** at 60 Hz
Active Display Area***	Landscape	Horizontal 432 mm Vertical 324 mm
	Portrait	Horizontal 324 mm Vertical 432 mm

Power supply		AC 100-120 V / 220-240 V @ 50/60 Hz DC 24V
Current Rating		@ 100-120V / 0.9A @ 220-240V / 0.5A @ DC 24V / 3.3A
Dimensions	Landscape Portrait Hight Adjust	498(W) x 501(H) x 246(D) mm 417(W) x 541(H) x 246(D) mm 80mm
Weight		11. 5kg
Operating Environmental Considerations	Temperature	5° C to + 35° C
	Humidity	30% to 80%
Storage Environmental Considerations	Temperature	-10° C to + 60° C
	Humidity	10% to 85%

* Interpolated Resolutions: when resolutions are shown that are lower than the pixel count of the LCD module, text may appear choppy or lines may appear to be bold. This is normal and necessary for all current flat panel technologies, each dot on the screen is actually one pixel, so to expand resolutions to full screen, an interpolation of the resolution must be done. When the interpolated resolutions is not an exact multiple of the native resolution, the mathematical interpolation necessary may cause some lines to appear thicker than others.

** NEC cites recommended resolutions at 60 Hz for optimal display performance.

*** Active display area is dependent upon the signal timing.

Technical specifications are subject to change without notice.

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Troubleshooting/Support

Problem	Check These Items
No picture	- The signal cable should be completely connected to the display card/computer. - The display card should be completely seated in its slot. - Power button and computer power switch should be in the ON position. - Check to make sure that a supported mode has been selected on the display card or system being used. (Please consult display card or system manual to change graphics mode.) - Check the monitor and your display card with respect to compatibility and recommended settings. - Check the signal cable connector for bent or pushed-in pins. - Check that the BNC/D-SUB button is in the correct position.
Power Button does not respond	Unplug the power cord of the monitor from the AC outlet to turn off and reset the monitor, or simultaneously press the RESET and Power buttons.
Image persistence	Image persistence is when a "ghost" of an image remains on the screen even after the monitor has been turned off. Unlike CRT monitors, LCD monitors' image persistence is not permanent. To alleviate image persistence, turn the monitor off for as long as an image was displayed. If an image was on the monitor for one hour and a "ghost" of that image remains, the monitor should be turned off for one hour to erase the image. **NOTE:** As with all personal display devices, NEC recommends using a screen saver at regular intervals whenever the screen is idle.

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Problem	Cheak These Items
Image is unstable, unfocused or swimming is apparent	- Signal cable should be completely attached to the computer. - Use the OSM Image Adjust controls to focus and adjust display by increasing or decreasing the Fine Control. When the display mode is changed, the OSM Image Adjust settings may need to be re-adjusted. - Check the monitor and your display card with respect to compatibility and recommended signal timings. - If your text is garbled, change the video mode to non-interlace and use 60Hz refresh rate.
LED on monitor is not lit (no green or amber colour can be seen)	- Power Switch should be in the ON position and power cord should be connected. - Make certain the computer is not in a power-saving mode (touch the keyboard or mouse).
Display image has a green cast to it	Select "TYPE" in the OSM Information menu 🛈 and press the ◄ or ► Control button.
Display image is not sized properly	- Use the OSM Image Adjust controls to increase or decrease the H. Size. - Check to make sure that a supported mode and signal timing has been selected on the display card or system being used. (Please consult display card or system manual to change graphics mode or refresh rate.)